
KARL WINSOR, Fields Institute

Pseudo-Anosov homeomorphisms and interval maps

Thurston classified the topological entropies of post-critically finite self-maps of the unit interval, solving a 1-dimensional analogue of the problem of classifying stretch factors of pseudo-Anosov surface homeomorphisms. Motivated by this work, we will describe a natural class of pseudo-Anosov homeomorphisms whose dynamics are closely related to the dynamics of interval maps. Specifically, we will show that pseudo-Anosov homeomorphisms of a punctured sphere whose quadratic differential has a single zero induce interval maps via their action on certain train tracks. One application of this result is a uniform lower bound of $\sqrt{2}$ for the associated stretch factors, recovering a result of Boissy-Lanneau. This is joint work with Ethan Farber.